

REMARKS

Claim Rejections Under 35 USC § 112

Claims 13, 14, 17, and 18 are rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

In particular, Claim 13, step (e), recited the limitations “a layer suitable for the mask, followed by a layer suitable for the membrane”. Claim 13 has been amended in step (e) to recite “a layer suitable for a mask layer, followed by a layer suitable for a membrane layer”. This corrects previous errors in terms of antecedent basis within Claim 13, while providing proper antecedent basis for Claim 14 which depends from Claim 13.

Claim 17 recites the limitation “the membrane” in line 2. The Examiner states that there is insufficient antecedent basis for the term “the membrane” in Claim 17.

Claim 17 has been amended to delete the text “the membrane” and to replace it with the text “the layer suitable for supporting a mask”, which has antecedent basis in Claim 16, from which Claim 17 depends. Support for the amendment to Claim 17 is found at page 7, line 32, through page 8, line 4, of applicants’ specification.

Claim 18 recites the limitation “the membrane layer” in line 2. The Examiner states that there is insufficient antecedent basis for the term “the membrane layer” in Claim 18.

Similarly to Claim 17, Claim 18 has been amended to delete the term “the membrane layer” and to replace it with the term “the layer suitable for supporting a mask”, which has antecedent basis in Claim 16, from which Claim 17 depends. Support for the amendment to Claim 18 is also found at page 7, line 32, through page 8, line 4, of applicants’ specification.

In light of the amendments to Claims 13, 17, and 18 set forth above, applicants respectfully request withdrawal of the rejection of Claims 13, 14, 17, and 18 under 35 USC § 112, second paragraph.

Claims 13, 14, 17, and 18 are indicated to be allowable if rewritten or amended to overcome the rejections under 35 USC § 112, second paragraph.

In light of the amendments to Claims 13, 17, and 18 set forth above, applicants respectfully request allowance of Claims 13, 14, 17, and 18.

Claim Rejections Under 35 USC § 102

Claim 22 is rejected under 35 USC § 102(b) as being anticipated by U.S. Patent No. 4,827,138, to Randall. In particular, the Examiner remarks that Claim 22 does not require that the first set of windows is separately or sequentially filled relative to the second set of windows.

Randall discloses a mask which is useful in parallel-printing ion beam lithography. The mask represents a relatively rigid screen constructed from a relatively rigid material, such as monocrystalline silicon, with meshes formed through the screen over the entire area of the screen. The preferred embodiment applies a less rigid filler material into the meshes over the entire area of the screen, then removes the filler material from transmissive areas of the mask. (Abstract)

At Col. 6, lines 3 - 6, Randall further states: "FIG. 4 shows a side view of the structure which results after this etch-back step. This resulting structure forms a screen 22 comprised of the material from epitaxial layer 12 and protection layer 14." It is subsequent to formation of the entire grid-like pattern that fill material is added to portions of the grid.

In the "Response to Arguments" section of the present Office Action, the Examiner remarks: "Applicant argues that feature sizes have decreased since the Randall patent issued. However, the present claims are not drawn to feature sizes." Applicants never intended to limit their claims to

particular feature sizes. Applicants were only providing background information which led to the development of applicants' sequential method of forming a mask support structure. As discussed in applicants' previously submitted Amendment "A", as a result of the decrease in feature size and the increase in the size (surface area) of the mask, construction of a uniform grid pattern exhibiting dimensional stability had become a problem. Applicants were unable to form a grid pattern by a single etch step in which material was removed from a substrate without creating dimensional stability problems during formation of the grid, which led to the development of the present invention. Applicants discovered that they could use a sequential method to create a portion of the desired grid where the walls supporting the windows were wider (thicker) than desired, fill the windows with a fill material, and then create additional portions of the desired grid, where the fill material supported walls adjacent the newly created portions of grid.

The sequential formation of portions of the grid structure is an essential element of applicants' invention as claimed in Claim 22. Applicants considered their Claim 22 to indicate a sequential formation of portions of the grid structure. However, in the interest of reaching an accord with the Examiner, applicants have amended Claim 22 to make this even clearer.

Applicants maintain that Randall does not teach or even suggest this sequential method of forming a grid of windows in a substrate; Randall teaches forming windows in a single etch step.

In light of the above distinctions and the amendment to Claim 22, applicants respectfully request withdrawal of the rejection of Claim 22 under 35 USC § 102(b), over Randall.

#### Claim Rejections Under 35 USC § 103

Claim 20 is rejected under 35 USC § 103(a) as being unpatentable over Randall, in view of U.S. Patent No. 6,168,890, to Takahashi.

Claim 21 is objected to as being dependent upon a rejected base claim, but is indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 20 has been amended, as set forth above, to include the features of Claim 21, which has been indicated to be allowable when combined with the limitations contained in Claim 20, as described above. Claim 21 has been cancelled without prejudice.

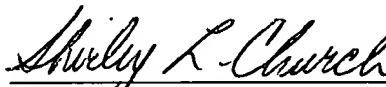
In light of the amendment to Claim 20, applicants respectfully request withdrawal of the rejection of Claim 20 under 35 USC § 103(a), over Randall, in view of Takahashi.

Claims 1 - 4, 6 - 12, 16, 19, and 23 are allowed.

Applicants respectfully contend that the presently pending claims as amended are in condition for allowance, and the Examiner is respectfully requested to enter the present amendments and to pass the application to allowance.

The Examiner is invited to contact applicants' attorney with any questions or suggestions, at the telephone number provided below.

Respectfully submitted,



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